

wherein said operational state model includes at least one operational arc showing the operation of said robot when passing between the two states is defined, said operational arc including a self-operational arc showing the operation of said robot when returning to a first state of said two states.

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cont.
8. (Currently amended) A recording medium having recorded thereon a program for controlling a robot for performing predetermined operations, said robot having drive portions, said program comprising the steps of:

defining, in a status transition model that defines a plurality of predetermined states and a plurality of predetermined operations of said robot, between each of any two directly passable states among the plurality of states, at least one operational arc showing the operation of said robot when passing between the two states;

giving to each of the defined operational arcs a predetermined weighting coefficient;

determining, when passing from a first state to a second state from among the plurality of states, a single transition path based on the weighting coefficients of attainable transition paths; and

controlling, based on the determined transition path, said robot so as to move from the first state to the second state,

wherein said operational arcs include a self-operational arc showing the operation of said robot when returning to a first state of said two states.

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9. (Currently amended) A program for controlling a robot for performing predetermined operations, said robot having drive portions, said program comprising the steps of:

randomly selecting one operation from among operations described in an operational state model that describes operational states of said robot; and

controlling said drive portions so as to perform the selected operation,

wherein said operational state model includes at least one operational arc showing the operation of said robot when passing between the operations described in said operational state model, said operational arc including a self-operational arc showing the operation of said robot when returning from said randomly selected one operation.

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Cont. 10. (Currently amended) A program for controlling a robot for performing predetermined operations, said robot having drive portions, said program comprising the steps of:

defining, in a status transition model that defines a plurality of predetermined states and a plurality of predetermined operations of said robot, between each of any two directly passable states among the plurality of states, at least one operational arc showing the operation of said robot when passing between the two states;

giving to each of the defined operational arcs a predetermined weighting coefficient;

determining, when passing from a first state to a second state from among the plurality of states, a single transition path based on the weighting coefficients of attainable transition paths; and

controlling, based on the determined transition path, said robot so as to move from the first state to the second state,

wherein said operational arcs include a self-operational arc showing the operation of said robot when returning to a first state of said two states.

RECAPT 11. (Currently amended) A robot for performing predetermined operations, said robot having drive portions, comprising:

storage means for storing an operational state model that defines operational states of said robot; and

C1 Canceled

operation control means for selecting one operation based on a predetermined probability from among operations described in said operational state model and for controlling said drive portions so as to perform the selected operation, said operation state model includes a plurality of states;

between each of any two directly passable states, at least one operational arc showing the operation of said robot when passing between the two states is defined;
and

the defined operational arcs are each given a transition probability of the operational arc being selected,

the operational arcs include a self-operational arc showing the operation of said robot when returning from a first state among the plurality of states to said first state.

✓
12. (Canceled)

✓
13. (Canceled)

14. (Currently amended) A robot according to claim 11, wherein the transition probabilities are changeable.

C2 Cont.
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15. (Currently amended) A robot for performing predetermined operations, said robot having drive portions, comprising:

storage means for storing a status transition model that defines a plurality of predetermined states and a plurality of predetermined operations of said robot;

wherein, between each of any two directly passable states among the plurality of states, at least one operational arc showing the operation of said robot when passing between the two states is defined;

the defined operational arcs are each given a predetermined weighting coefficient; and

control means for determining a single transition path when passing from a first state to a second state from among the plurality of states, based on the weighting coefficients of attainable transition paths,

wherein said operational arc includes a self-operational arc showing the operation of said robot when returning to a first state of said two states.

16. (Previously added) A robot according to claim 15, wherein the weighting coefficients are dynamically changeable.

17. (Currently Amended) A robot control method for controlling a robot for performing predetermined operations, said robot having drive portions, said robot control method comprising the steps of:

selecting one operation based on a predetermined probability from among operations described in an operational state model that describes operational states of said robot; and

controlling said drive portions so as to perform the selected operation,

wherein said operational state model includes at least one operational arc showing the operation of said robot when passing between the operations described in said operational state model, said operational arc including a self-operational arc showing the operation of said robot when returning from said selected one operation to another operation.

18. (Currently Amended) A robot control method for controlling a robot for performing predetermined operations, said robot having drive portions, said robot control method comprising the steps of:

defining, in a status transition model that defines a plurality of predetermined states and a plurality of predetermined operations of said robot, between each of any two directly passable states among the plurality of states, at least one operational arc showing the operation of said robot when passing between the two states;